

audio signal source external to the housing, the cable being secured with the end cap, the end cap connected to cover the open end of the hollow body portion;

a receiver for transducing electrical energy received along the plurality of electrical conductors to sound energy, the receiver being supported within the hollow body portion of the housing and having a sound outlet port extending partially into the hollow elongated tubular portion of the housing in a closely conforming manner;

an insert formed from a resilient material, the insert being disposed between the receiver and ^{at least one} ~~interior walls~~ of the unitary housing to inhibit movement of the receiver within the hollow body portion and assisting to provide an acoustic seal between the hollow body portion and the elongated tubular portion;

a damper supported within the hollow elongated tubular portion of the housing at a position opposite the sound outlet port of the receiver, sound from the sound outlet port of the receiver being conducted to the damper by the hollow elongated tubular portion;

a resilient sealing member disposed over the hollow elongated tubular portion for sealing with an ear canal of a wearer;

the earphone extending into and substantially acoustically sealing the ear canal of the wearer when inserted, the damper and receiver response compensating for loss of external ear resonance and coupling resonance that otherwise would occur when the insert earphone is inserted into the ear canal of the wearer to thereby assist in providing a high fidelity response.

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cont.

23. An apparatus comprising:

an electrical connector for connection to a source of electronic audio signals;

a plurality of conductors extending from the electrical connector and carrying the electronic audio signals;

a pair of insert earphones, each insert earphone comprising

a unitary housing having a hollow body portion and a hollow elongated tubular portion, at least two of the plurality of electrical conductors extending into the hollow body portion of the housing,

a receiver for transducing electrical energy received along the plurality of

electrical conductors to sound energy, the receiver being supported within the hollow body portion of the housing and having a sound outlet port extending partially into the hollow elongated tubular portion of the housing,

a damper supported within the hollow elongated tubular portion of the housing at a position opposite the sound outlet port of the receiver, sound from the sound outlet port of the receiver being conducted to the damper by the hollow elongated tubular portion,

a resilient sealing member disposed over the hollow elongated tubular portion for sealing with an ear canal of a wearer,

the earphone extending into and substantially acoustically sealing the ear canal of the wearer when inserted, the damper and receiver response compensating for loss of external ear resonance and coupling resonance that otherwise would occur when the insert earphone is inserted into the ear canal of the wearer to thereby assist in providing a high fidelity response.

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cont.

24. An apparatus comprising:

an electrical connector for connection to a source of electronic audio signals;

a first plurality of conductors extending from the electrical connector and carrying the electronic audio signals;

a filter connected to receive the electronic audio signals from the first plurality of conductors, high frequency components of the electronic audio signals being presented at an output of the filter at an amplitude greater than corresponding low frequency components;

a second plurality of conductors extending from the output of the filter for carrying the electronic audio signals therefrom;

a pair of insert earphones, each insert earphone comprising

a unitary housing having a hollow body portion and a hollow elongated tubular portion, at least two of the plurality of electrical conductors extending into the hollow body portion of the housing,

a receiver for transducing the electronic audio signals received from the second plurality of electrical conductors to sound energy, the receiver being supported within the hollow body portion of the housing and having a sound outlet port extending partially into the hollow elongated tubular portion of the housing,

a damper supported within the hollow elongated tubular portion of the housing at a position opposite the sound outlet port of the receiver, sound from the sound outlet port of the receiver being conducted to the damper by the hollow elongated tubular portion,

a resilient sealing member disposed over the hollow elongated tubular portion for sealing with an ear canal of a wearer,

the earphone extending into and substantially acoustically sealing the ear canal of the wearer when inserted, the damper and receiver response compensating for loss of external ear resonance and coupling resonance that otherwise would occur when the insert earphone is inserted into the ear canal of the wearer to thereby provide a high fidelity response.

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